

Notice of Allowability

Application No.

10/782,998

Examiner

Kagnew H. Gebreyesus

Applicant(s)

ITOH, NOBUYA

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to November, 10, 2005.
2. ☒ The allowed claim(s) is/are 23-30.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached:
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 4/21/04 & 8/19/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 11/10/05
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Alan S. Nadel on November 10, 2005.

Claims 1 to 22. (Canceled)

23. An isolated gene comprising a nucleotide sequence encoding an amino acid sequence selected from the group consisting of:

- (a) SEQ ID NO: 1;
- (b) an amino acid sequence having a sequence homology of 95% or more with SEQ ID NO: 1, wherein the sequence is a sequence of a protein having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-1-phenylethanol;
- (c) an amino acid sequence encoded by a DNA having SEQ ID NO: 2;
- (d) an amino acid sequence encoded by a DNA having a nucleotide sequence having a homology of 95% or more with SEQ ID NO: 2, wherein the amino acid sequence is an amino acid sequence of a protein having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-1-phenylethanol,

Art Unit: 1652

(e) an amino acid sequence encoded by a DNA that hybridizes under stringent conditions with the nucleotide sequence complementary to SEQ ID NO: 2, the stringent conditions comprising conducting the hybridization in a solution containing 50% formamide under a high ion concentration of 6 x SSC at 65°C, and then washing under a low ion concentration of 0.1 x SSC at 65°C wherein the amino acid sequence is an amino acid sequence of a protein having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-l-phenylethanol,

(f) an amino acid sequence having a sequence homology of 90% or more with SEQ ID NO: 1, wherein the sequence is a sequence of a protein obtained from a microorganism belonging to the genus *Leifsonia*, having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-l-phenylethanol, and

(g) an amino acid sequence having a sequence homology of 90% or more with SEQ ID NO: 1, wherein the sequence is a sequence of a protein obtained from *Leifsonia* sp. S-749, having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-l-phenylethanol.

24. The isolated gene according to claim 23 further comprising a linked promoter.

25. A recombinant vector comprising the gene according to claim 23.

26. A transformant obtained by introducing the gene according to claim 24 or a recombinant vector that comprises a gene comprising a DNA encoding an amino acid sequence selected from the group consisting of:

(a) SEQ ID NO: 1;

(b) an amino acid sequence having a sequence homology of 95% or more with SEQ ID NO: 1, wherein the sequence is sequence of a protein having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-l-phenylethanol;

Art Unit: 1652

- (c) an amino acid sequence encoded by a DNA having SEQ ID NO: 2;
- (d) an amino acid sequence encoded by a DNA having a nucleotide sequence having a homology of 95% or more with SEQ ID NO: 2, wherein the amino acid sequence is an amino acid sequence of a protein having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-1-phenylethanol,
- (e) an amino acid sequence encoded by a DNA that hybridizes under stringent conditions with the nucleotide sequence complementary to SEQ ID NO: 2, the stringent conditions comprising conducting the hybridization in a solution containing 50% formamide under a high ion concentration of 6 x SSC at 65°C, and then washing under a low ion concentration of 0.1 x SSC at 65°C wherein the amino acid sequence is an amino acid sequence of a protein having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-1-phenylethanol,
- (f) an amino acid sequence having a sequence homology of 90% or more with SEQ ID NO: 1, wherein the sequence is a sequence of a protein obtained from a microorganism belonging to the genus *Leifsonia*, having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-1-phenylethanol, and
- (g) an amino acid sequence having a sequence homology of 90% or more with SEQ ID NO: 1, wherein the sequence is a sequence of a protein obtained from *Leifsonia* sp. S-749, having at least an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-1-phenylethanol into an isolated host cell.

27. The transformant according to claim 26, wherein the host cell is a microorganism.

28. The transformant according to claim 26, wherein the host cell is *E. coli*.

Art Unit: 1652

29. A transformant obtained by introducing the gene according to claim 23 into an isolated host cell.

30. A method for producing a transformant, wherein the method comprises introducing the recombinant vector according to claim 25 into a host cell.

Claims 31-44 are cancelled.

The following is an examiner's statement of reasons for allowance:

The prior art teaches the ability of dried cells from *Geotrichum candidum* (APG4) to reduce various fluorinated ketones including 2, 2, 2-trifluoroacetophenone to the corresponding alcohol however the specific nucleic acid sequence of SEQ ID NO: 2 encoding the enzymatic protein of SEQ ID NO: 2 having an ability to reduce 2,2,2-trifluoroacetophenone to 2,2,2-trifluoro-1-phenylethanol has not been disclosed by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kagnaw H. Gebreyesus whose telephone number is 571-272-2937. The examiner can normally be reached on 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Achutamurthy ponnathapura can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 10/782,998

Page 6

Art Unit: 1652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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